

ACTA METALLURGICA ET MATERIALIA

CONTENTS AND AUTHOR INDEX VOLUME 39 1991

Board of Directors

Professor Gareth Thomas
Dr Robert I. Jaffee
Dr William W. Scott Jr
Professor Mats Hillert

Professor William W. Gerberich
Professor P. Haasen
Professor Robert C. Gifkins
Robert B. Wood

Dr Robert Fullman, *Secretary-Treasurer*

Professor Bernard H. Kear, *Chairman*

Editor

Professor Michael F. Ashby, University of Cambridge, University Engineering Laboratories,
Trumpington Street, Cambridge CB2 1PZ, England

Deputy Editor

Professor L. M. Brown

Assistant to the Editor

Mrs Irene Kightley

Associate Editors

Professor Carlos A. Pampillo (*Argentina*)
Professor I. Polmear (*Australia*)
Professor B. Lux (*Austria*)
Professor D. L. Delaey (*Belgium*)
Professor M. A. Mannheimer (*Brazil*)
Professor W. Tyson (*Canada*)
Professor J.-m Xiao (*China*)
Professor V. Lindroos (*Finland*)
Professor L. P. Kubin (*France*)
Professor P. Haasen (*Germany*)

Professor S. Ranganathan (*India*)
Professor David G. Brandon (*Israel*)
Professor T. Mori (*Japan*)
Professor N. J. Kim (*Korea*)
Professor M. J. Yacaman (*Mexico*)
Professor J. T. M. De Hosson (*The Netherlands*)
Professor F. R. N. Nabarro (*South Africa*)
Professor Mats Hillert (*Sweden*)
Professor John P. Hirth (*U.S.A.*)
Professor V. L. Indenbom (*U.S.S.R.*)

Advertising and Subscription Offices: Enquiries from customers in North America should be sent to: Pergamon Press Inc., 395 Saw Mill River Road, Elmsford, NY 10523, U.S.A. and from the remainder of the world to: Pergamon Press plc, Headington Hill Hall, Oxford OX3 0BW, England.

Publishing Office: Pergamon Press plc, Pergamon House, Bampfylde Street, Exeter, Devon EX1 2AH, England.

ACTA METALLURGICA ET MATERIALIA

CONTENTS OF VOLUME 39

NUMBER 1

- | | | |
|--|-----|--|
| A. Hütten and P. Haasen | 1 | Constitution of melt-spun NdFeB-magnets studied by analytical field ion microscopy |
| A. Chiba, D. Shindo
and S. Hanada | 13 | Site occupation determination of Pd in Ni ₃ Al by ALCHEMI |
| H. Gudmundsson, D. Brooks
and J. A. Wert | 19 | Mechanisms of continuous recrystallization in an Al-Zr-Si alloy |
| G. Ghosh, M. Chandrasekaran
and L. Delaey | 37 | Effect of micro-additions of Mo, P, Si and Ti on the thermal stability of Ni ₂₄ Zr ₇₆ metallic glass |
| R. J. Arsenault, L. Wang
and C. R. Feng | 47 | Strengthening of composites due to microstructural changes in the matrix |
| D. J. Lloyd | 59 | Aspects of fracture in particulate reinforced metal matrix composites |
| M. Taya, K. E. Lulay
and D. J. Lloyd | 73 | Strengthening of a particulate metal matrix composite by quenching |
| William C. Johnson and
W. H. Müller | 89 | Characteristics of phase equilibria in coherent solids |
| P. A. Tibbits | 105 | Reexamination of a 1955 theory of climb-controlled steady-state creep |
| J. Yao and J. R. Cahoon | 111 | Theoretical modeling of grain boundary diffusion of hydrogen and its effect on permeation curves |
| J. Yao and J. R. Cahoon | 119 | Experimental studies of grain boundary diffusion of hydrogen in metals |

NUMBER 2

- | | | |
|----------------------------------|-----|--|
| D. C. Dunand and
A. Mortensen | 127 | On plastic relaxation of thermal stresses in reinforced metals |
| C. C. Anya and T. N. Baker | 141 | The effect of grain size on the "alloy-softening" of low carbon structural steels by silicon |
| S. Goto and M. McLean | 153 | Role of interfaces in creep of fibre-reinforced metal-matrix composites—I. Continuous fibres |
| S. Goto and M. McLean | 165 | Role of interfaces in creep of fibre-reinforced metal-matrix composites—II. Short fibres |

W. Robison, R. Sharma and L. Eyring	179	Observation of gold-silicon alloy formation in thin films by high resolution electron microscopy
F. R. N. Nabarro	187	The dependence of activation enthalpy on stress in shear processes
A. S. Booth, M. Cosgrave and S. G. Roberts	191	The warm-prestressing effect in silicon
Woo-Jin Kim, J. Wolfenstine and O. D. Sherby	199	Tensile ductility of superplastic ceramics and metallic alloys
F. F. Lange, L. Atteraaas, F. Zok and J. R. Porter	209	Deformation consolidation of metal powders containing steel inclusions
G. Eggeler	221	Microstructural parameters for creep damage quantification
B. A. Greenberg, O. V. Antonova, V. N. Indenbaum, L. E. Karkina, A. B. Notkin, M. V. Ponomarev and L. V. Smirnov	233	Dislocation transformations and the anomalies of deformation characteristics in TiAl—I. Models of dislocation blocking
B. A. Greenberg, O. V. Antonova, V. N. Indenbaum, L. E. Karkina, A. B. Notkin, M. V. Ponomarev and L. V. Smirnov	243	Dislocation transformations and the anomalies of deformation characteristics in TiAl—II. The structure of dislocation ensemble: experiment and theory

NUMBER 3

R. Pippan	255	Dislocation emission and fatigue crack growth threshold
I. Müller and Huibin Xu	263	On the pseudo-elastic hysteresis
S. Atamert and J. E. King	273	Elemental partitioning and microstructural development in duplex stainless steel weld metal
M. Kléman and Ch. Sommers	287	Dislocations in a Penrose lattice
A. Kimura and H. K. Birnbaum	295	Effect of adsorbed surface poisons on the loss of hydrogen from nickel
C.-H. Jan, D. Swenson, X.-Y. Zheng, J.-C. Lin and Y. A. Chang	303	On the determination of diffusion coefficients in multi-phase ternary couples
P. Guyot and G. M. Raynaud	317	Dislocation structure distributions and properties of heavily cold rolled aluminum and aluminum-magnesium alloys

C. F. Lau and H. W. Kui	323	Microstructures of undercooled germanium
R. Bonnet et D. David	329	Estimation des énergies de fautes intrinsèques dans des phases (Ni, Al, Ti, Cr) basées sur Ni ₃ Al
S. R. Ortner	341	A STEM study of the effect of precipitation on grain boundary chemistry in AISI 304 steel
W. Kesternich, N. H. Packan and H. Schroeder	351	Radiation-induced precipitation at grain boundaries in Ni-8 at.% Si
T. D. Le and I. M. Bernstein	363	Effects of hydrogen on dislocation morphology in spheroidized steel
U. Wolf, S. M. Foiles and H. F. Fischmeister	373	Study of misfit dislocations at the interface of weakly bonded metal/metal systems
R. A. Vandermeer, R. A. Masumura and B. B. Rath	383	Microstructural paths of shape-preserved nucleation and growth transformations
F. Barlat and A. K. Vasudévan	391	Influence of precipitate microstructure on flow and forming properties of an aluminum alloy sheet
K. S. Ravichandran	401	Near threshold fatigue crack growth behavior of a titanium alloy: Ti-6Al-4V
W. B. Lee and K. C. Chan	411	A criterion for the prediction of shear band angles in f.c.c. metals
V. Tvergaard	419	Failure by ductile cavity growth at a metal-ceramic interface

NUMBER 4

R. R. Kieschke, R. E. Somekh and T. W. Clyne	427	Overview No. 91: Sputter deposited barrier coatings on SiC monofilaments for use in reactive metallic matrices—I. Optimisation of barrier structure
C. M. Warwick, R. R. Kieschke and T. W. Clyne	437	Overview No. 91: Sputter deposited barrier coatings on SiC monofilaments for use in reactive metallic matrices—II. System stress state
R. R. Kieschke, C. M. Warwick and T. W. Clyne	445	Overview No. 91: Sputter deposited barrier coatings on SiC monofilaments for use in reactive metallic matrices—III. Microstructural stability in composites based on magnesium and titanium
P. Magnin and R. Trivedi	453	Eutectic growth: a modification of the Jackson and Hunt theory
P. Magnin, J. T. Mason and R. Trivedi	469	Growth of irregular eutectics and the Al-Si system

V. Randle	481	Interactions between grain boundaries and helium bubbles in an austenitic steel during strain induced grain growth
T. Mohri, K. Terakura, S. Takizawa and J. M. Sanchez	493	First-principles study of short range order and instabilities in Au-Cu, Au-Ag and Au-Pd alloys
J. M. Vitek, S. A. David, D. J. Alexander, J. R. Keiser and R. K. Nanstad	503	Low temperature aging behavior of type 308 stainless steel weld metal
R. Sasikumar and T. R. Ramamohan	517	Distortion of the temperature and solute concentration fields due to the presence of particles at the solidification front—effects on particle pushing
Dongliang Lin (T. L. Lin), Da Chen and Hui Lin	523	Investigation of the segregation behavior of boron in Ni ₃ Al alloys by PTA technique
O. Kwon and A. J. DeArdo	529	Interactions between recrystallization and precipitation in hot-deformed microalloyed steels
F.-S. Shieu and S. L. Sass	539	Dislocation mechanisms for the relaxation of thermal stress at metal-ceramic interfaces
Ph. Tavernier and J. A. Szpunar	549	Modelling of recrystallization textures
Ph. Tavernier and J. A. Szpunar	557	A Monte-Carlo simulation applied to the modelling of nucleation of texture
R. W. Hayes	569	On the creep behavior of the Ti ₃ Al titanium aluminide Ti-25Al-10Nb-3V-1Mo
B. N. Cox and D. B. Marshall	579	Stable and unstable solutions for bridged cracks in various specimens
J. K. Park and A. J. Ardell	591	Microchemical analysis of precipitate free zones in 7075-Al in the T6, T7 and RRA tempers
D. S. Stone	599	Scaling laws in dislocation creep
A. K. Tyagi, M.-P. Macht and V. Naundorf	609	Diffusion coefficients of ⁶³ Ni in Fe ₄₀ Ni ₄₀ B ₂₀ metallic glass
G. H. Rubiolo	619	Temperature and strain rate superposition properties of low cycle fatigue failure curves in the Coffin-Manson representation
E. I. Rabkin, V. N. Semenov, L. S. Shvindlerman and B. B. Straumal	627	Penetration of tin and zinc along tilt grain boundaries 43° [100] in Fe-5 at.% Si alloy: premelting phase transition?
H. J. Vogel and L. Ratke	641	Instability of grain boundary grooves due to equilibrium grain boundary diffusion

- | | | |
|--|-----|---|
| S. Q. Xiao and P. Haasen | 651 | HREM investigation of homogeneous decomposition in a Ni-12 at.% Al alloy |
| O. A. Ruano, J. Wolfenstine,
J. Wadsworth and
O. D. Sherby | 661 | Harper-Dorn and power law creep in uranium dioxide |
| A. G. Fox and M. A. Tabbernor | 669 | The bonding charge density of β' NiAl |
| C. Gandhi and R. Raj | 679 | A model for subgrain superplastic flow in aluminum alloys |
| J. J. Hoyt and S. Spooner | 689 | The surface energy of metastable Al_3Li precipitates from coarsening kinetics |
| W. F. Flanagan, P. Bastias
and B. D. Lichter | 695 | A theory of transgranular stress-corrosion cracking |
| K. Yaldram and K. Binder | 707 | Spinodal decomposition of a two-dimensional model alloy with mobile vacancies |
| D. Rittel, R. Aharonov,
G. Feigin and I. Roman | 719 | Experimental investigation of surface instabilities in cylindrical tensile metallic specimens |

NUMBER 5

- | | | |
|---|-----|--|
| B. Basu, J. A. Sekhar,
R. J. Schaefer and
R. Mehrabian | 725 | Analysis of the steady state molten pool obtained by heating a substrate with an electron beam |
| J. R. Brockenbrough,
S. Suresh and
H. A. Wienecke | 735 | Deformation of metal-matrix composites with continuous fibers: geometrical effects of fiber distribution and shape |
| P. Fratzl, F. Langmayr,
G. Vogl and W. Miekeley | 753 | The growth of ω -phase inclusions in Ti-20 at.% Mo and the competition between elastic and surface energies |
| J. Harase, R. Shimizu
and D. J. Dingley | 763 | Texture evolution in the presence of precipitates in Fe-3% Si alloy |
| S. A. Dregia and P. Wynblatt | 771 | Equilibrium segregation and interfacial energy in multi-component systems |
| Jian-Sheng Wang and
P. M. Anderson | 779 | Fracture behavior of embrittled f.c.c. metal bicrystals |
| D. M. Knowles and
J. E. King | 793 | The influence of ageing on fatigue crack growth in SiC-particulate reinforced 8090 |
| M. Srinivas, G. Malakondaiah,
R. W. Armstrong and
P. Rama Rao | 807 | Ductile fracture toughness of polycrystalline Armco iron of varying grain size |
| T. Sakata, H. Mori
and H. Fujita | 817 | Electron irradiation induced crystalline-amorphous transition in a $\text{Co}_{75}\text{B}_{25}$ alloy |

- | | | |
|---|-----|--|
| K. H. Hwang, W. S. Yang,
T. B. Wu, C. M. Wan and
J. G. Byrne | 825 | Long-period stacking-fault structure of the needle-like phase in a duplex Fe-Mn-Al-C alloy |
| B. N. Pramila Bai and
S. K. Biswas | 833 | Effect of magnesium addition and heat treatment on mild wear of hypoeutectic aluminium-silicon alloys |
| P. Y. Hou and J. Stringer | 841 | Room temperature strains in Cr_2O_3 scales formed at elevated temperatures on Ni-25wt%Cr and Y- and Al-doped Ni-25wt%Cr |
| H.-R. Sinning | 851 | Low-frequency internal friction of $\text{Pd}_{40}\text{Ni}_{40}\text{P}_{20}$ near the glass transition |
| D. H. Kim, K. Chattopadhyay
and B. Cantor | 859 | Quasicrystalline and related crystalline phases in a rapidly solidified 2024-2Li aluminium alloy |
| Q. Tan and
T. S. Kê (Ge Tingsui) | 877 | Internal friction peak (P3 peak) attributed to the interaction of Cottrell atmosphere of magnesium atoms with dislocation kinks in aluminium |
| T. S. Kê (Ge Tingsui)
and Q. Tan | 885 | Internal friction peak associated with the enhanced re-orientation of split interstitials of magnesium atoms in close vicinity of the dislocation kinks in aluminium |
| X. Y. Huang, W. Mader
and R. Kirchheim | 893 | Hydrogen and oxygen at metal/oxide interfaces |
| Song Shenhua, Xu Tingdong,
Yuan Zhexi and Yu Zongsen | 909 | Equilibrium grain-boundary segregation and the effect of boron in B-doped Fe-30 wt%Ni austenitic alloy |
| L. Ratke and H. J. Vogel | 915 | Theory of grain boundary grooving in the convective-diffusive regime |
| G. Ghosh, M. Chandrasekaran
and L. Delaey | 925 | Isothermal crystallization kinetics of $\text{Ni}_{24}\text{Zr}_{76}$ and $\text{Ni}_{24}(\text{Zr-X})_{76}$ amorphous alloys |
| Y. Torisaka | 937 | Superplasticity and internal friction of nickel-base superalloy |
| Y. Torisaka and S. Kojima | 947 | Superplasticity and internal friction of a superplastic Zn-22% Al eutectoid alloy |
| B. Derby | 955 | The dependence of grain size on stress during dynamic recrystallisation |
| J. Svoboda | 963 | Numerical study of cavity nucleation kinetics |
| S. Onaka, T. Okada and
M. Kato | 971 | Relaxation kinetics and relaxed stresses caused by interface diffusion around spheroidal inclusions |
| H. N. G. Wadley,
R. J. Schaefer, A. H. Kahn,
M. F. Ashby, R. B. Clough,
Y. Geffen and J. J. Wlassich | 979 | Sensing and modeling of the hot isostatic pressing of copper pressing |

- | | | |
|--|------|---|
| C. Michaelsen and L. Schultz | 987 | Structural study of amorphous Zr-Fe-B and Zr-Fe-Si alloys by ^{57}Fe -Mössbauer and magnetization measurements |
| C. S. Nichols and D. R. Clarke | 995 | Critical currents in inhomogeneous triangular Josephson arrays: a model for polycrystalline superconductors |
| H. J. Fecht | 1003 | Phase selection during crystallization of undercooled liquid eutectic lead-tin alloys |
| P. R. Munroe and I. Baker | 1011 | Observation of $\langle 001 \rangle$ dislocations and a mechanism for transgranular fracture on $\{001\}$ in FeAl |
| J. B. Davis, H. C. Cao, G. Bao and A. G. Evans | 1019 | The fracture energy of interfaces: an elastic indentation technique |

NUMBER 6

- | | | |
|---|------|--|
| M. F. Ashby | 1025 | Overview No. 92: Materials and shape |
| X. W. Zhou and T. Y. Hsu (Xu Zuyao) | 1041 | Thermodynamics of the martensitic transformation in Cu-Al alloys |
| X. W. Zhou and T. Y. Hsu (Xu Zuyao) | 1045 | Thermodynamics of the martensitic transformation in Cu-Zn-Al alloys |
| Shyh-Chin Huang and E. L. Hall | 1053 | Characterization of the effect of vanadium additions to TiAl base alloys |
| F. Delannay and P. Warren | 1061 | On crack interaction and crack density in strain-induced cracking of brittle films on ductile substrates |
| U. P. Singh and S. Banerjee | 1073 | On the origin of pop-in crack extension |
| W. A. Spitzig | 1085 | Strengthening in heavily deformation processed Cu-20%Nb |
| C.-L. Yu and T.-P. Perng | 1091 | Surface effects on electrochemical hydrogen diffusion in stainless steels |
| Jing-Jy Lin and Tsong-Pyng Perng | 1101 | Concentration dependence of hydrogen diffusivity in amorphous $\text{Fe}_{40}\text{Ni}_{38}\text{Mo}_4\text{B}_{18}$ alloy |
| M. Hillert and T. Sakuma | 1111 | Thermodynamic modeling of the $c \rightarrow t$ transformation in ZrO_2 alloys |
| D. B. Zahl and R. M. McMeeking | 1117 | The influence of residual stress on the yielding of metal matrix composites |
| S. Kajiwara and T. Kikuchi | 1123 | On the abnormally large tetragonality of martensite in Fe-Ni-C alloys |
| H. Siethoff, K. Ahlborn and H. G. Brion | 1133 | The effect of solutes on the dynamical recovery of silicon and germanium |
| T. Baykara and G. M. Pharr | 1141 | Effects of liquid phases on intrinsic interfacial sliding of alkali halide crystals |

- | | | |
|--|------|--|
| N. K. Mukhopadhyay,
K. N. Ishihara,
S. Ranganathan
and K. Chattopadhyay | 1151 | Rational approximant structures and phason strain in icosahedral quasicrystalline phases |
| Ph. A. Dubey, B. Schönfeld
and G. Kosterz | 1161 | Shape and internal structure of Guinier-Preston zones in <u>Al-Ag</u> |
| H. E. Dève and A. G. Evans | 1171 | Twin toughening in titanium aluminide |
| C. Sommer, H.-J. Christ
and H. Mughrabi | 1177 | Non-linear elastic behaviour of the roller bearing steel SAE 52100 during cyclic loading |
| B. N. Cox | 1189 | Extrinsic factors in the mechanics of bridged cracks |
| M. Manoharan, J. P. Hirth
and A. R. Rosenfield | 1203 | Combined mode I-mode III fracture toughness of a spherodized 1090 steel |
| R. Becker | 1211 | Analysis of texture evolution in channel die compression—I. Effects of grain interaction |
| Sung-Man Lee and
Jai-Young Lee | 1231 | The effect of hydrogen on the crystallization behavior of amorphous Pd-Si alloys |
| D. G. Ulmer and
C. J. Altstetter | 1237 | Hydrogen-induced strain localization and failure of austenitic stainless steels at high hydrogen concentrations |
| Wei Bingbo, Yang Gencang
and Zhou Yaohe | 1249 | High undercooling and rapid solidification of Ni-32.5% Sn eutectic alloy |
| D. L. Beke, P. I. Loeff
and H. Bakker | 1259 | On the elastic mismatch in the order-disorder transformation and solid state amorphization of intermetallic compounds—I. Estimation of the elastic mismatch energy during order-disorder transition |
| D. L. Beke, H. Bakker
and P. I. Loeff | 1267 | On the elastic mismatch in the order-disorder transformation and solid state amorphization of intermetallic compounds—II. Criteria for the solid-amorphous transformation in intermetallic compounds |
| Jun-Whan Jeong,
Duk N. Yoon and
Doh-Yeon Kim | 1275 | Chemically induced instability at interfaces of cubic ZrO_2 - Y_2O_3 grains in a liquid matrix |
| S. Sangal,
K. J. Kurzydowski
and K. Tangri | 1281 | The effect of extrinsic grain boundary dislocations on the grain size strengthening in polycrystals |
| M. Menyhard, B. Rothman,
C. J. McMahon Jr, P. Lejcek
and V. Paidar | 1289 | On the fracture path and the intergranular phosphorus distribution in phosphorus-doped Fe-Si symmetrical bicrystals |
| N. Ramakrishnan, H. Okada
and S. N. Atluri | 1297 | Computer simulation of transformation induced plasticity using finite element method |

- | | | |
|--|------|---|
| S. Horibe and R. Hirahara | 1309 | Cyclic fatigue of ceramic materials: influence of crack path and fatigue mechanisms |
| D. L. Davidson,
J. B. Campbell
and J. Lankford | 1319 | Fatigue crack growth through partially stabilized zirconia at ambient and elevated temperatures |
| K. S. Ravichandran | 1331 | A rationalisation of fatigue thresholds in pearlitic steels using a theoretical model |
| K. S. Ravichandran and
E. S. Dwarakadasa | 1343 | Theoretical modelling of the effects of grain size on the threshold for fatigue crack growth |
| C. S. Pande and E. Dantsker | 1359 | On a stochastic theory of grain growth—III |
| T. J. Marrow, C. A. Hippsley
and J. E. King | 1367 | Effect of mean stress on hydrogen assisted fatigue crack propagation in duplex stainless steel |

NUMBER 7

- | | | |
|---|------|--|
| J. Hjelen, R. Ørsund and
E. Nes | 1377 | Overview No. 93: On the origin of recrystallization textures in aluminium |
| D. C. Dunand and
A. Mortensen | 1405 | Dislocation emission at fibers—I. Theory of longitudinal punching by thermal stresses |
| D. C. Dunand and
A. Mortensen | 1417 | Dislocation emission at fibers—II. Experiments and microstructure of thermal punching |
| M. Gremaud, M. Carrard
and W. Kurz | 1431 | Banding phenomena in Al-Fe alloys subjected to laser surface treatment |
| H. Fukutomi, T. Iseki,
T. Endo and T. Kamijo | 1445 | Sliding behavior of coincidence grain boundaries deviating from ideal symmetric tilt relationship |
| L. L. Lisiecki and
O. B. Pedersen | 1449 | Temperature dependence of cyclic saturation in low amplitude fatigue of copper single crystals |
| D. B. Miracle | 1457 | Deformation in NiAl bicrystals |
| A. Serra, R. C. Pond and
D. J. Bacon | 1469 | Computer simulation of the structure and mobility of twinning dislocations in h.c.p. metals |
| M. Zhu, T. C. Li, J. T. Liu
and D. Z. Yang | 1481 | Microstructure characteristics of NiTi shape memory alloy obtained by explosive compact of elemental nickel and titanium powders |
| I. Manna, S. K. Pabi
and W. Gust | 1489 | Discontinuous precipitation in a Cu-12 at.% In alloy |
| J. Eckert, L. Schultz
and K. Urban | 1497 | Formation of quasicrystalline and amorphous phases in mechanically alloyed Al-based and Ti-Ni-based alloys |

- | | | |
|---|------|--|
| M. D. Mathew, V. Singh,
W. Chen and R. P. Wahi | 1507 | Life prediction for a nickel base alloy Nimonic PE 16 under low cycle fatigue loading at 923 K |
| D. Mukherji, F. Jiao,
W. Chen and R. P. Wahi | 1515 | Stacking fault formation in γ' phase during monotonic deformation of IN738LC at elevated temperatures |
| M. S. Laws and
P. J. Goodhew | 1525 | Grain boundary structure and chromium segregation in a 316 stainless steel |
| R. Busch and V. Ruth | 1535 | The contribution of lateral mass flow effects to the compensation of unequal diffusion rates in the gold-silver system |
| H. F. Lopez | 1543 | Analysis of solute segregation effects on the peritectic transformation |
| M. Tanaka, T. Sakaki
and H. Iizuka | 1549 | Creep deformation of ductile two-phase alloys |
| L. Clapham, C. Jagadish
and D. L. Atherton | 1555 | The influence of pearlite on Barkhausen noise generation in plain carbon steels |
| V. Kwong, Y. C. Koo,
S. J. Thorpe and K. T. Aust | 1563 | Crystallization behaviour of $Al_{85}Y_{10}Ni_5$ by isochronal and isothermal annealing |
| P. A. Deymier,
M. Shamsuzzoha and
J. D. Weinberg | 1571 | A study of grain boundary translational states in a $\Sigma 3[\bar{1}10]/(\bar{1}\bar{1}1)$ bicrystal |
| A. Bartlett, A. G. Evans
and M. Rühle | 1579 | Residual stress cracking of metal/ceramic bonds |
| M. Y. He and A. G. Evans | 1587 | The strength and fracture of metal/ceramic bonds |
| D. L. Zhang and B. Cantor | 1595 | Melting behaviour of In and Pb particles embedded in an Al matrix |
| Ch. V. Kopecky,
A. V. Andreeva and
G. D. Sukhomlin | 1603 | Multiple twinning and specific properties of $\Sigma = 3^n$ boundaries in f.c.c. crystals |
| J. S. Huang and L. J. Gibson | 1617 | Fracture toughness of brittle honeycombs |
| J. S. Huang and L. J. Gibson | 1627 | Fracture toughness of brittle foams |
| I. Baker, P. Nagpal, F. Liu
and P. R. Munroe | 1637 | The effect of grain size on the yield strength of FeAl and NiAl |
| M. Bayerlein
and H. Mughrabi | 1645 | The formation of either tongue- or ribbon-like extrusions in fatigued copper polycrystals |
| C. Phaniraj, M. Nandagopal,
S. L. Mannan and
P. Rodriguez | 1651 | The relationship between transient and steady state creep in AISI 304 stainless steel |

- | | | |
|---|------|--|
| C. S. Nichols, R. F. Cook,
D. R. Clarke and
D. A. Smith | 1657 | Alternative length scales for polycrystalline materials—I.
Microstructure evolution |
| C. S. Nichols, R. F. Cook,
D. R. Clarke and
D. A. Smith | 1667 | Alternative length scales for polycrystalline materials—II.
Cluster morphology |
| U. Prakash, R. A. Buckley
and H. Jones | 1677 | Novel faulted structures in rapidly solidified Fe-37 at.%
Al-15 at.% Mo alloy |
| P. Villechaise, J. Mendez
and P. Violan | 1683 | Cyclic behaviour and surface slip features in $\langle 111 \rangle$ oriented
copper single crystals |
| Jai-Young Lee,
Woo-Cheal Choi,
Yong-Gyoo Kim and
Jeong-Yong Lee | 1693 | Transformation characteristics of hydrogen-induced
amorphization of the ordered Zr_3Al phase |
| B. G. Eristavi,
E. M. Diasamidze,
R. N. Dekanosidze,
N. I. Maisuradze,
E. R. Kutelia,
A. V. Sichinava
and N. E. Menabde | 1703 | Structural transformations of oxygen implanted surfaces of
refractory metals (Mo, W, Nb) |
| T. E. Mitchell and J. P. Hirth | 1711 | The shape, configuration and stress field of twins and
martensite plates |

NUMBER 8

- | | | |
|---|------|---|
| H. J. Roven and E. Nes | 1719 | Overview No. 94: Cyclic deformation of ferritic steel—I.
Stress-strain response and structure evolution |
| H. J. Roven and E. Nes | 1735 | Overview No. 94: Cyclic deformation of ferritic steel—II.
Stage II crack propagation |
| H. Ezaki, M. Morinaga,
M. Kato and N. Yukawa | 1755 | Electronic and atomic-size effects on the omega phase
formation in transition-metal based b.c.c. alloys |
| D. G. Morris and
M. A. Morris | 1763 | Microstructure and strength of nanocrystalline copper
alloy prepared by mechanical alloying |
| D. G. Morris and
M. A. Morris | 1771 | Mechanical properties of FeAl-ZrB ₂ alloys prepared by
rapid solidification |
| Y. Brechet, J. D. Embury,
S. Tao and L. Luo | 1781 | Damage initiation in metal matrix composites |
| P. Lours, A. Coujou
and P. Coulomb | 1787 | On the deformation of the $\langle 100 \rangle$ orientated γ' strengthen-
ing phase of the CMSX2 superalloy |

- | | | |
|---|------|--|
| A. Chiba, S. Hanada
and S. Watanabe | 1799 | Ductilization of Ni ₃ Al by macroalloying with Pd |
| C. W. Price | 1807 | Analysis of models for grain-impingement compensation and their effect on recrystallization kinetics |
| S. V. Raj and
T. G. Langdon | 1817 | Creep behavior of copper at intermediate temperatures—II. Surface microstructural observations |
| S. V. Raj and
T. G. Langdon | 1823 | Creep behavior of copper at intermediate temperatures—III. A comparison with theory |
| J. C. Holzer and
K. F. Kelton | 1833 | Kinetics of the amorphous to icosahedral phase transformation in Al-Cu-V alloys |
| P. F. P. Fichtner,
H. Schroeder and
H. Trinkaus | 1845 | A simulation study of Ostwald ripening of gas bubbles in metals accounting for real gas behaviour |
| T. C. Lu, A. G. Evans,
R. J. Hecht and
R. Mehrabian | 1853 | Toughening of MoSi ₂ with a ductile (niobium) reinforcement |
| J. Yang, S. M. Pickard,
C. Cady, A. G. Evans
and R. Mehrabian | 1863 | The stress/strain behavior of aluminum matrix composites with discontinuous reinforcements |
| G. Bao, J. W. Hutchinson
and R. M. McMeeking | 1871 | Particle reinforcement of ductile matrices against plastic flow and creep |
| T. C. Lu, J. Yang, Z. Suo,
A. G. Evans, R. Hecht and
R. Mehrabian | 1883 | Matrix cracking in intermetallic composites caused by thermal expansion mismatch |
| W. Lojkowski | 1891 | On the spreading of grain boundary dislocations and its effect on grain boundary properties |
| K. J. Hemker, M. J. Mills
and W. D. Nix | 1901 | An investigation of the mechanisms that control intermediate temperature creep of Ni ₃ Al |
| K. P. Trumble and M. Rühle | 1915 | The thermodynamics of spinel interphase formation at diffusion-bonded Ni/Al ₂ O ₃ interfaces |
| A. Garg and J. M. Howe | 1925 | Nucleation and growth of Ω phase in Al-4.0 Cu-0.5 Mg-0.5 Ag alloy—an <i>in situ</i> hot-stage TEM study |
| A. Garg and J. M. Howe | 1939 | Convergent-beam electron diffraction analysis of the Ω phase in an Al-4.0 Cu-0.5 Mg-0.5 Ag alloy |
| T. Kamijo, A. Fujiwara,
Y. Yoneda and
H. Fukutomi | 1947 | Formation of cube texture in copper single crystals |
| J. Kwieciński and
J. W. Wyrzykowski | 1953 | Investigation of grain boundary self-diffusion at low temperatures in polycrystalline aluminium by means of the dislocation spreading method |

- | | | |
|---|------|---|
| L. A. Bendersky,
W. J. Boettinger
and A. Roytburd | 1959 | Coherent precipitates in the b.c.c./orthorhombic two-phase field of the Ti-Al-Nb system |
| C. Y. Barlow and N. Hansen | 1971 | Deformation structures and flow stress in aluminium containing short whiskers |
| R. S. Hay and L. E. Matson | 1981 | Alumina/yttrium-aluminum garnet crystallographic orientation relationships and interphase boundaries: observations and interpretation by geometric criteria |
| Y. Deng and G. S. Ansell | 1995 | Boundary friction for thermoelastic martensitic transformations |
| M. J. Pfeifer and
P. W. Voorhees | 2001 | A graphical method for constructing coherent phase diagrams |
| Y. Enomoto | 2013 | Finite volume fraction effects on coarsening—II. Interface-limited growth |
| F. E. Heredia and
D. P. Pope | 2017 | Effect of boron additions on the ductility and fracture behavior of Ni ₃ Al single crystals |
| F. E. Heredia and
D. P. Pope | 2027 | The plastic flow of binary Ni ₃ Al single crystals |
| T. Narutani and
J. Takamura | 2037 | Grain-size strengthening in terms of dislocation density measured by resistivity |
| C. Wei, S. Lin, R. G. Qian
and J. M. Hsiao | 2051 | Computer simulation of the effect of grain size on the properties of polycrystalline specimens by finite element method |

NUMBER 9

i The *Acta Metallurgica* J. Herbert Holloman Award

- | | | |
|---|------|---|
| Oh-Hun Kwon and
G. L. Messing | 2059 | A theoretical analysis of solution-precipitation controlled densification during liquid phase sintering |
| H. C. Lin, S. K. Wu,
T. S. Chou and H. P. Kao | 2069 | The effects of cold rolling on the martensitic transformation of an equiatomic TiNi alloy |
| W. W. Mullins | 2081 | The statistical particle growth law in self-similar coarsening |
| J. J. Hoyt | 2091 | On the coarsening of precipitates located on grain boundaries and dislocations |
| B. G. Pound | 2099 | Hydrogen trapping in work-hardened alloys |
| L. Battezzati, C. Antonione,
G. Riontino, F. Marino
and H.-R. Sinning | 2107 | The crystallization of a Pd ₆₀ Ti ₂₀ Si ₂₀ metallic glass |

- | | | |
|---|------|---|
| J. D. Hunt | 2117 | A numerical analysis of dendritic and cellular growth of a pure material investigating the transition from "array" to "isolated" growth |
| H. W. Hesselbarth and
I. R. Göbel | 2135 | Simulation of recrystallization by cellular automata |
| R. M. Cannon,
B. J. Dalgleish,
R. H. Dauskardt, T. S. Oh
and R. O. Ritchie | 2145 | Cyclic fatigue-crack propagation along ceramic/metal interfaces |
| T. Takasugi | 2157 | Hydrogen embrittlement of L1 ₂ -type Ni ₃ (Al, Ti) single crystals |
| Jong M. Han, Cha Y. Lim
and Young G. Kim | 2169 | The role of deformation twinning on mechanical properties of an austenitic Fe-30Mn-1.2Al-0.3C alloy |
| P. Rachev, L. Terziev,
J. Lecomte-Beckers
and J. Wegria | 2177 | Electron microscopical investigations of hexagonal phase precipitation in Zn-12 wt% Al-1 wt% Cu and Zn-27 wt% Al-2 wt% Cu alloys |
| R. D. K. Misra and
P. Rama Rao | 2183 | On the grain boundary chemistry of chromium containing martensitic steels |

NUMBER 10

- | | | |
|---|------|---|
| J. W. Cahn | 2189 | Stability, microstructural evolution, grain growth, and coarsening in a two-dimensional two-phase microstructure |
| K. K. Ray and D. Mondal | 2201 | The effect of interlamellar spacing on strength of pearlite in annealed eutectoid and hypoeutectoid plain carbon steels |
| L. Zhao and K. Tangri | 2209 | TEM investigation on the interfacial boundaries in as-cast Ti ₃ Al + TiAl alloy |
| J. Besson and M. Abouaf | 2225 | Grain growth enhancement in alumina during hot isostatic pressing |
| M. Durman and S. Murphy | 2235 | Precipitation of metastable ϵ -phase in a hypereutectic zinc-aluminium alloy containing copper |
| H. Cai, J. T. Evans and
N. J. H. Holroyd | 2243 | Unstable crack extension in high strength aluminium alloys |
| P. Mulheran and
J. H. Harding | 2251 | A simple statistical model for grain growth in materials |
| A. Levy and J. M. Papazian | 2255 | Elastoplastic finite element analysis of short-fiber-reinforced SiC/Al composites: effects of thermal treatment |
| X. B. Zhou and
J. Th. M. De Hosson | 2267 | Spinel/metal interfaces in laser coated steels: a transmission electron microscopy study |

- | | | |
|--|------|--|
| H. E. Dève and
M. J. Maloney | 2275 | On the toughening of intermetallics with ductile fibers: role of interfaces |
| Jianshe Lian and Jiwei Chen | 2285 | Isotropic polycrystal yield surfaces of b.c.c. and f.c.c. metals: crystallographic and continuum mechanics approaches |
| X. L. He, M. Djahazi,
J. J. Jonas and J. Jackman | 2295 | The non-equilibrium segregation of boron during the recrystallization of Nb-treated HSLA steels |
| P. J. Desré | 2309 | Effect of sharp concentration gradients on the stability of a two-component amorphous layer obtained by solid state reaction |
| J. Llorca, A. Needleman
and S. Suresh | 2317 | An analysis of the effects of matrix void growth on deformation and ductility in metal-ceramic composites |
| W. H. Gourdin and
D. H. Lassila | 2337 | Flow stress of OFE copper at strain rates from 10^{-3} to 10^4 s^{-1} : grain-size effects and comparison to the mechanical threshold stress model |
| R. T. DeHoff | 2349 | A geometrically general theory of diffusion controlled coarsening |
| M. Zafrany, J. P. Peyrade,
F. Voillot, R. Coquillé
and L. P. Kubin | 2361 | Incremental creep testing: application to the plasticity of InP between 0.31 and 0.77 T_m |
| W. J. Liu, J. K. Brimacombe
and E. B. Hawbolt | 2373 | Influence of composition on the diffusivity of carbon in steels—I. Non-alloyed austenite |
| M. De Graef,
J. P. A. Löfvander
and C. G. Levi | 2381 | The structure of complex monoborides in γ -TiAl alloys with Ta and B additions |
| G. González-Doncel,
M. Torralba
and O. A. Ruano | 2393 | Mechanical behavior and lattice reorientation during tensile deformation of Al-4%Cu-0.1%Fe single crystals |
| B. L. Adams and D. P. Field | 2405 | A statistical theory of creep in polycrystalline materials |
| R. Lerf and D. G. Morris | 2419 | Plastic deformation of an iron-modified titanium trialuminide alloy |
| K. Bhattacharya | 2431 | Wedge-like microstructure in martensites |
| O. Sahin and H. Margolin | 2445 | Elastic stresses and slip intersections with f.c.c. twins |
| B. Strnadel and K. Mazanec | 2461 | Low temperature transcrystalline failure in spheroidized steels |
| P. Lejček and S. Hofmann | 2469 | Segregation enthalpies of phosphorus, carbon and silicon at {013} and {012} symmetrical tilt grain boundaries in an Fe-3.5 at.% Si alloy |

NUMBER 11

i 1991 Acta Metallurgica Gold Medal

- | | | |
|--|------|--|
| P. R. Jemian,
J. R. Weertman,
G. G. Long
and R. D. Spal | 2477 | Characterization of 9Cr-1MoVNb steel by anomalous small-angle X-ray scattering |
| S. Aharon and A. Brokman | 2489 | Lattice dynamics study of vibrational modes in gold $\Sigma 5[001]$ twist boundary |
| Liu Qiyang, Li Qingchun
and Liu Qifu | 2497 | Modification of Al-Si alloys with sodium |
| R. Sasikumar and M. Kumar | 2503 | Redistribution of particles during casting of composite melts: effects of buoyancy and particle pushing |
| M. Bengisu, O. T. Inal
and O. Tosyali | 2509 | On whisker toughening in ceramic materials |
| P. C. Searson | 2519 | Hydrogen evolution and entry in palladium at high current density |
| Shang-Xian Wu,
Yiu-Wing Mai,
B. Cotterell and
Cuong Viet Le | 2527 | Ductile-brittle fracture transition due to increasing crack length in a medium carbon steel |
| Long-Qing Chen and
A. G. Khachaturyan | 2533 | Computer simulation of structural transformations during precipitation of an ordered intermetallic phase |
| R. Nakkalil | 2553 | Formation of adiabatic shear bands in eutectoid steels in high strain rate compression |
| M. Kajihara and W. Gust | 2565 | Chemical composition of regions alloyed by DIGM or DIR |
| M. Bannister and
M. F. Ashby | 2575 | The deformation and fracture of constrained metal sheets |
| G. Vekinis, M. F. Ashby
and P. W. R. Beaumont | 2583 | The compressive failure of alumina containing controlled distributions of flaws |
| A. B. C. Dadson and
R. D. Doherty | 2589 | Plane polarized optical microscopy studies of the structure of hot-deformed and partially recrystallized aluminium samples |
| R. Balasubramaniam,
D. J. Duquette and
K. Rajan | 2597 | On stress corrosion cracking in aluminum-lithium alloys |
| R. Balasubramaniam,
D. J. Duquette and
K. Rajan | 2607 | Hydride formation in an Al-Li-Cu alloy |

- | | | |
|---|------|--|
| T. Y. Hsu (Xu Zuyao)
and X. W. Zhou | 2615 | Thermodynamics of the bainitic transformation in a Cu-Zn-Al alloy |
| G. Venkataraman,
Y. W. Chung and
T. Mura | 2621 | Application of minimum energy formalism in a multiple slip band model for fatigue—I. Calculation of slip band spacings |
| G. Venkataraman,
Y. W. Chung and
T. Mura | 2631 | Application of minimum energy formalism in a multiple slip band model for fatigue—II. Crack nucleation and derivation of a generalised Coffin-Manson law |
| F. Li and P. S. Bate | 2639 | Strain path change effects in cube textured aluminium sheet |
| E. M. Schulson,
G. A. Kuehn, D. A. Jones
and D. A. Fifolt | 2651 | The growth of wing cracks and the brittle compressive failure of ice |
| O. Yoshinari, K. Sanpei
and K. Tanaka | 2657 | Hydrogen-solute interaction in nickel-based dilute alloys studied by internal friction technique |
| C. N. Tomé,
R. A. Lebensohn
and U. F. Kocks | 2667 | A model for texture development dominated by deformation twinning: application to zirconium alloys |
| P. Bacher, P. Wynblatt
and S. M. Foiles | 2681 | A Monte Carlo study of the structure and composition of (001) semicoherent interphase boundaries in Cu-Ag-Au alloys |
| O. R. Myhr and Ø. Grong | 2693 | Process modelling applied to 6082-T6 aluminium weldments—I. Reaction kinetics |
| O. R. Myhr and Ø. Grong | 2703 | Process modelling applied to 6082-T6 aluminium weldments—II. Applications of model |
| A. van den Beukel | 2709 | Analysis of structural relaxation data in metallic glasses in terms of different models |
| K. Morii, T. Ohba,
K. Otsuka, H. Sakamoto
and K. Shimizu | 2719 | Crystallography of $\beta_2 \rightarrow \gamma'_2$ martensitic transformation in Au-47.5 at.% Cd and Au-47.5 at.% Cd-Cu alloys |
| P. V. Evans and S. R. Stiffler | 2727 | Interfacial atomic transport in the nucleation of crystalline silicon from the melt |
| J. Rösler, G. Bao and
A. G. Evans | 2733 | The effects of diffusional relaxation on the creep strength of composites |
| Tong-Yi Zhang and
J. C. M. Li | 2739 | Image forces and shielding effects of an edge dislocation near a finite length crack |
| C. McCullough,
J. J. Valencia,
C. G. Levi, R. Mehrabian,
M. Maloney and R. Hecht | 2745 | Solidification paths of Ti-Ta-Al alloys |

- | | | |
|--|------|--|
| I. M. Wolff and A. Ball | 2759 | Ductility in high-chromium super-ferritic alloys—I. Micro-structural influences on the ductile-brittle transition |
| I. M. Wolff and A. Ball | 2771 | Ductility in high-chromium super-ferritic alloys—II. Plastic deformation and crack-zone shielding |
| H.-A. Kuhn, H. Biermann,
T. Ungár and H. Mughrabi | 2783 | An X-ray study of creep-deformation induced changes of the lattice mismatch in the γ' -hardened monocrystalline nickel-base superalloy SRR 99 |
| A. Ludwig | 2795 | Limit of absolute stability for crystal growth into under-cooled alloy melts |
| D. S. Schwartz, W. B. Yelon,
R. R. Berliner,
R. J. Lederich and
S. M. L. Sastry | 2799 | A novel hydride phase in hydrogen charged Ti_3Al |
| A. Orlová | 2805 | On the relation between dislocation structure and internal stress measured in pure metals and single phase alloys in high temperature creep |
| B. J. Heuser, J. S. King,
G. C. Summerfield,
F. Boué and
J. E. Epperson | 2815 | SANS measurement of deuterium trapping at dislocations and grain boundaries in palladium |
| J. D. Verhoeven,
L. S. Chumbley,
F. C. Laabs and
W. A. Spitzig | 2825 | Measurement of filament spacing in deformation processed Cu-Nb alloys |
| M. Kuo and R. A. Fournelle | 2835 | Diffusion induced grain boundary migration (DIGM) and liquid film migration (LFM) in an Al-2.07 wt% Cu alloy |
| A. K. Singh, V. Singh
and S. Lele | 2847 | Ground state structures in ordered binary h.c.p. alloys with pairwise third neighbour interactions |
| T. Furuhashi and
H. I. Aaronson | 2857 | Computer modeling of partially coherent b.c.c.:h.c.p. boundaries |
| T. Furuhashi, J. M. Howe
and H. I. Aaronson | 2873 | Interphase boundary structures of intragranular proeutectoid α plates in a hypoeutectoid Ti-Cr alloy |
| T. Furuhashi and
H. I. Aaronson | 2887 | Crystallography and interfacial structure of proeutectoid α grain boundary allotriomorphs in a hypoeutectoid Ti-Cr alloy |
| D. K. Kuhn and
H. H. Johnson✠ | 2901 | Transient analysis of hydrogen permeation through nickel membranes |
| Jenqdaw Wang and R. Raj | 2909 | Interface effects in superplastic deformation of alumina containing zirconia, titania or hafnia as a second phase |

- | | | |
|--|------|--|
| Y. Zhou, K. W. Neale
and L. S. Tóth | 2921 | Analytical solutions for the ideal orientations of f.c.c. rolling textures |
| N. Akaiwa, S. C. Hardy
and P. W. Voorhees | 2931 | The effects of convection on Ostwald ripening in solid-liquid mixtures |
| Y. Estrin, C. P. Ling and
P. G. McCormick | 2943 | Localization of plastic flow: spatial vs temporal instabilities |

NUMBER 12

- | | | |
|---|------|---|
| R. D. Field, D. F. Lahrman
and R. Darolia | 2951 | Slip systems in $\langle 001 \rangle$ oriented NiAl single crystals |
| R. D. Field, D. F. Lahrman
and R. Darolia | 2961 | The effect of alloying on slip systems in $\langle 001 \rangle$ oriented NiAl single crystals |
| E. M. Schulson, Y. Xu,
P. R. Munroe, S. Guha
and I. Baker | 2971 | The yield strength of off-stoichiometric Ni ₃ Al with and without boron |
| Y. Estrin and
P. G. McCormick | 2977 | Modelling the transient flow behaviour of dynamic strain ageing materials |
| W. Lengauer | 2985 | The titanium-nitrogen system: a study of phase reactions in the subnitride region by means of diffusion couples |
| H. C. Cao and A. G. Evans | 2997 | On crack extension in ductile/brittle laminates |
| P. Gomiero, F. Livet,
O. Lyon and J. P. Simon | 3007 | Double structural hardening in an AlLiCuMg alloy studied by anomalous small angle X-ray scattering |
| J. N. Johnson,
P. S. Lomdahl
and J. M. Wills | 3015 | Analysis of internal stress and anelasticity in the shock-compressed state from unloading wave data |
| K. T. Park and E. Goo | 3027 | Deformation twinning in DO ₃ ordered Fe ₃ Al alloys |
| T. G. Nieh and
J. Wadsworth | 3037 | Superplasticity in fine-grained 20% Al ₂ O ₃ /YTZ composite |
| A. J. Wilkinson and
D. J. Dingley | 3047 | Quantitative deformation studies using electron back scatter patterns |
| K. Trinckauf and
E. Nembach | 3057 | Concentration gradients at the phase boundary between a γ' -precipitate and the γ -matrix of a superalloy |
| J. S. Zhang, P. E. Li and
J. Z. Jin | 3063 | Combined matrix/boundary precipitation strengthening in creep of Fe-15 Cr-25 Ni alloys |
| R. Najafabadi, H. Y. Wang,
D. J. Srolovitz and
R. LeSar | 3071 | A new method for the simulation of alloys: application to interfacial segregation |

- | | | |
|---|------|--|
| D. Bouvard and
F. F. Lange | 3083 | Relation between percolation and particle coordination in binary powder mixtures |
| O. I. Noskovich,
E. I. Rabkin,
V. N. Semenov,
B. B. Straumal and
L. S. Shvindlerman | 3091 | Wetting and premelting phase transitions in 38° [100] tilt grain boundary in (Fe-12 at.% Si)-Zn alloy in the vicinity of the A ₂ -B ₂ bulk ordering in Fe-12 at.% Si alloy |
| W. B. Li, J. L. Henshall,
R. M. Hooper and
K. E. Easterling | 3099 | The mechanisms of indentation creep |
| L. Ben Mostefa,
G. Saindrenan,
M. P. Solignac and
J. P. Colin | 3111 | Effect of interfacial sulfur segregation on the hot ductility drop of Fe-Ni36 alloys |
| Xu Tingdong, Song Shenhua,
Shi Huazhong, W. Gust
and Yuan Zhexi | 3119 | A method of determining the diffusion coefficient of vacancy-solute atom complexes during the segregation to grain boundaries |
| R. Lappalainen and R. Raj | 3125 | Microtensile superplasticity in ceramic fibers |
| I. E. Reimanis,
B. J. Dalgleish and
A. G. Evans | 3133 | The fracture resistance of a model metal/ceramic interface |
| S. M. Collard and
R. B. McLellan | 3143 | High-temperature elastic constants of gold single-crystals |
| V. S. Ananthan and
E. O. Hall | 3153 | Macroscopic aspects of Lüders band deformation in mild steel |
| Y. Watanabe, H. Nozaki,
M. Kato and A. Sato | 3161 | Formation of Fe ₁₆ N ₂ and development of magnetic anisotropy in a Fe-N alloy |
| A. Seki, D. N. Seidman,
Y. Oh and S. M. Foiles | 3167 | Monte Carlo simulations of segregation at [001] twist boundaries in a Pt(Au) alloy—I. Results |
| A. Seki, D. N. Seidman,
Y. Oh and S. M. Foiles | 3179 | Monte Carlo simulations of segregation at [001] twist boundaries in a Pt(Au) alloy—II. Discussion |
| R. Raj, A. Pearce and
C. M. Kennefick | 3187 | Thin films of transition metals on oxides |
| A. V. Korznikov,
I. M. Safarov,
D. V. Laptionok and
R. Z. Valiev | 3193 | Structure and properties of superfine-grained iron compacted out of ultradisperse powder |
| Y. Takahashi, K. Takahashi
and K. Nishiguchi | 3199 | A numerical analysis of void shrinkage processes controlled by coupled surface and interface diffusion |

- | | | |
|--|------|--|
| C. McCullough and
A. J. Baker | 3217 | The role of grain boundary migration in reheat cracking |
| D. J. Schissler,
A. H. Chokshi,
T. G. Nieh and
J. Wadsworth | 3227 | Microstructural aspects of superplastic tensile deformation and cavitation failure in a fine-grained yttria stabilized tetragonal zirconia |
| Yeon-Wook Kim and
T. F. Kelly | 3237 | The solidification structures in submicron droplets of Fe-Co alloys |

I *Acta Metallurgica et Materialia*—Associate Editors

**Reproduced with the permission of Pergamon Press Inc., by University
Microfilms Inc. Duplication or resale without permission is prohibited.**

